

## ABSTRACT

The present invention provides a *Brevundimonas* sp. strain SD212-derived peptide having  $\beta$ -ionone ring-2-hydroxylase activity and a gene encoding the same, to thereby make it possible to produce rare carotenoids in which a hydroxyl group is introduced at the position 2 (2') carbon in their  $\beta$ -ionone ring in large quantities.

The present invention also provides a novel gene encoding an enzyme which introduces a hydroxyl group at the position 3 (3') carbon in the  $\beta$ -ionone ring of carotenoids, and a novel gene encoding a geranylgeranyl pyrophosphate synthase.